Department of Ecology

Concentrated Animal Feeding Operation (CAFO) National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit

Fact Sheet

PRELIMINARY DRAFT: July 19, 2004

Table of Contents

This fact sheet summarizes the regulatory basis of the concentrated animal feeding operation (CAFO) permit. It also describes the decisions made on the permit and how the public may comment on the permit.

A. Activity

Concentrated Animal Feeding Operations (CAFOs) are facilities that generally:

- Have dairy cows, veal calves, other cattle, swine, poultry, horses, sheep, ducks, or other types of livestock;
- Stable or confine the animals for a certain length of time; and
- Meet certain size requirement or have been determined to be a significant contributor of pollution.

The definition of a CAFO from S2.D of the permit is:

> A CAFO is a lot or facility that is defined as a Large CAFO or Medium CAFO, or that is designated as a CAFO.
>
> (1) **Large CAFO**.
> A lot or facility is defined as a Large CAFO if it meets all of the following three conditions:
> (a) It has animals (other than aquatic animals) that have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period,
> (b) Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility where animals are confined, and
> (c) It stables or confines as many as or more than the numbers of animals specified in any of the following categories:
> (i) 700 mature dairy cows, whether milked or dry;
> (ii) 1,000 veal calves;
> (iii) 1,000 cattle other than mature dairy cows or veal calves. Cattle includes but is not limited to heifers, steers, bulls and cow/calf pairs;
> (iv) 2,500 swine each weighing 55 pounds or more;
> (v) 10,000 swine each weighing less than 55 pounds;
> (vi) 500 horses;
> (vii) 10,000 sheep or lambs;
> (viii) 55,000 turkeys;
> (ix) 30,000 laying hens or broilers, if the AFO uses a liquid manure handling system;
> (x) 125,000 chickens (other than laying hens), if the AFO uses other than a liquid manure handling system;

(xi) 82,000 laying hens, if the AFO uses other than a liquid manure handling system;
(xii) 30,000 ducks (if the AFO uses other than a liquid manure handling system); or
(xiii) 5,000 ducks (if the AFO uses a liquid manure handling system).

(2) **Medium CAFO**.

A lot or facility is defined as a Medium CAFO if it meets all of the following four conditions:

(a) It has animals (other than aquatic animals) that have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period,

(b) Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility where animals are confined,

(c) It stables or confines the number of animals that falls within any of the following ranges:
(i) 200 to 699 mature dairy cows, whether milked or dry;
(ii) 300 to 999 veal calves;
(iii) 300 to 999 cattle other than mature dairy cows or veal calves. Cattle includes but is not limited to heifers, steers, bulls and cow/calf pairs;
(iv) 750 to 2,499 swine each weighing 55 pounds or more;
(v) 3,000 to 9,999 swine each weighing less than 55 pounds;
(vi) 150 to 499 horses;
(vii) 3,000 to 9,999 sheep or lambs;
(viii) 16,500 to 54,999 turkeys;
(ix) 9,000 to 29,999 laying hens or broilers, if the AFO uses a liquid manure handling system;
(x) 37,500 to 124,999 chickens (other than laying hens), if the AFO uses other than a liquid manure handling system;
(xi) 25,000 to 81,999 laying hens, if the AFO uses other than a liquid manure handling system;
(xii) 10,000 to 29,999 ducks (if the AFO uses other than a liquid manure handling system); or
(xiii) 1,500 to 4,999 ducks (if the AFO uses a liquid manure handling system); and

(d) Either one of the following conditions are met:
(i) Pollutants are discharged into waters of the state through a man-made ditch or other similar man-made device; or
(ii) Pollutants are discharged directly into waters of the state which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation.

(3) **Designated CAFOs**.
A lot or facility may be designated as a CAFO by the Department of Ecology. See condition S2.D for more details.

(4) Note: Two or more operations under common ownership are considered to be a single operation for the purposes of determining the number of animals at an operation, if they adjoin each other or if they use a common area or system for the disposal of wastes.

Incidental vegetation in a clear area of confinement, such as a feedlot or pen, would not exclude an operation from meeting the definition of a CAFO.

In the case of a winter feedlot, the ‘‘no vegetation’’ criterion in the CAFO definition is meant to be evaluated during the winter, when the animals are confined. Therefore, use of a winter feedlot to grow crops or other vegetation during periods of the year when animals are not confined would not exclude the feedlot from meeting the definition of a CAFO.

B. Geographic Area

This permit applies to the entire state. There are CAFOs across the state, with some areas having higher concentrations of CAFOs. CAFOs in different parts of the state face different challenges in protecting water quality in both the production area and field application area. Some areas, such as northwest Washington, have very shallow ground water. Protecting ground water in these areas is more difficult. Western Washington in general receives more rain water that must be managed than eastern Washington (See Figure 1).

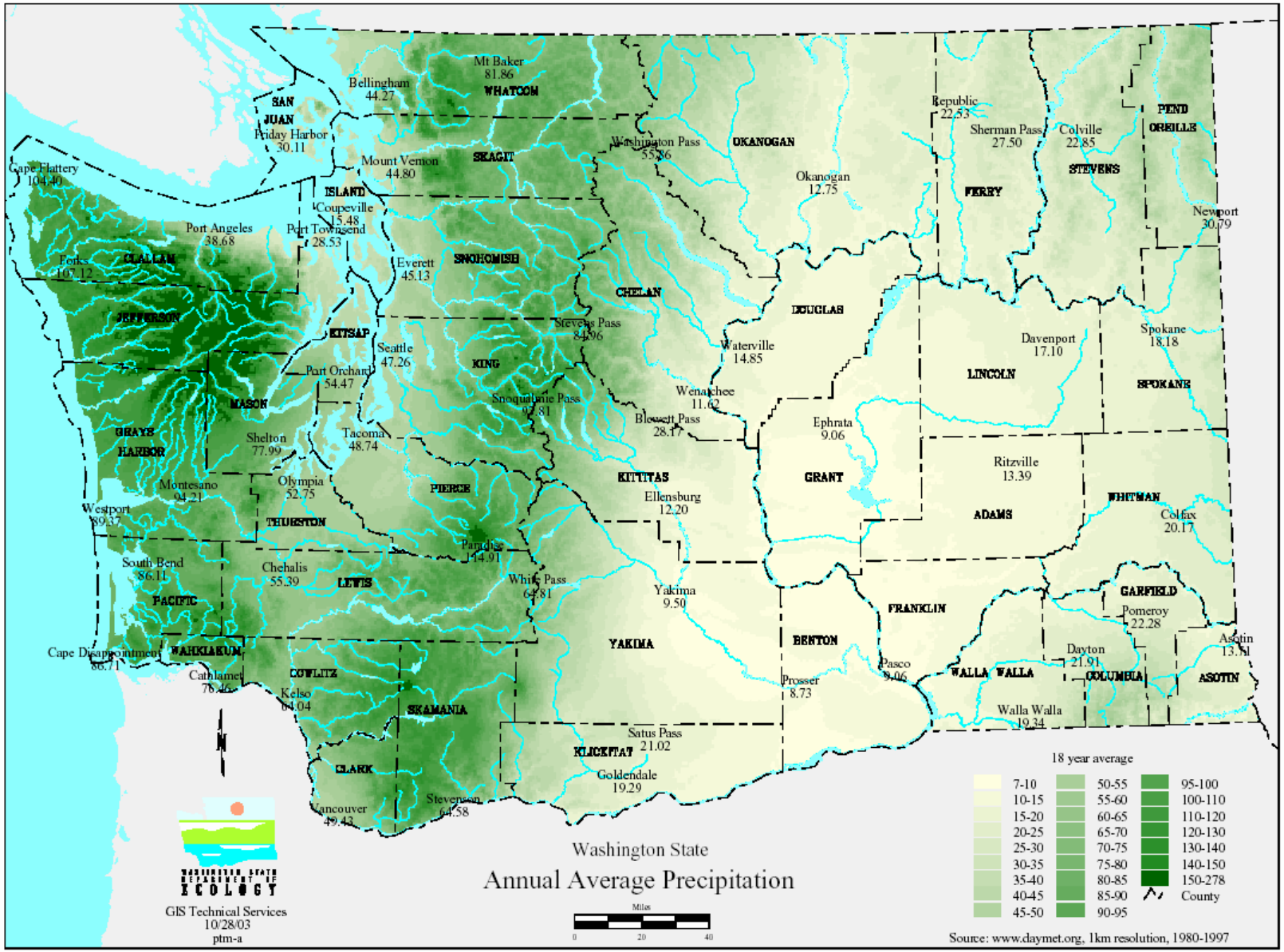

Figure 1 – Washington State Annual Average Precipitation

C. Applicants

Any CAFO that meets the definition under S2.D of the permit is required to obtain coverage under this general permit or obtain an individual permit.

A general discharge permit is written to cover similar types of discharges from similar activities. An individual discharge permit is tailored to address specific issues for an individual operation. CAFOs that require site-specific conditions to protect water quality may need to be issued individual permits.

Section 301(a) of the Federal Clean Water Act (CWA) provides that the discharge of pollutants from point sources, including CAFOs, to surface waters is unlawful except in accordance with an NPDES permit. The State Water Pollution Control Act, RCW 90.48.160, requires any person who conducts a commercial or industrial operation which results in the disposal of liquid or solid waste material into waters of the state to obtain a permit. Waters of the state, defined in RCW 90.48.020, include both surface and ground waters.

D. Facilities

There are an estimated 161 Large CAFOs in Washington. There are an estimated 546 medium sized animal feeding operations, with some percentage of those likely meeting the definition of Medium CAFOs (see section S2.D of the permit).

Animal Type	Estimated Number of Large CAFOs	Estimated Number of Medium Animal Feeding Operations (*some percentage would be Medium CAFOs*)
Horses	1	7
Sheep or Lambs	3	14
Ducks	0?	1?
Dairy cows	94	234
Other Cattle	30	225
Swine each weighing 55 pounds or more	0?	11
Swine each weighing less than 55 pounds	0?	3
Laying hens	13	2
Chickens (other than laying hens)	24	49

E. Application for Coverage

A facility must submit a completed application to apply for coverage under the general permit. The application is attached and available on Ecology's webpage at www.ecy.wa.gov/programs/wq/permits/cafo.

F. Effluent Characteristics of the Discharge

Process wastewater and manure are the primary wastes being regulated under this permit. Process wastewater means water directly or indirectly used in the operation of the CAFO for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other CAFO facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater also includes any water which comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs, or bedding.

Process waste water and manure are generated in the animal confinement area. It is stored throughout the non-growing season. During the growing season, process waste water and manure may be applied to fields as a beneficial nutrient source as allowed under the nutrient management plan. Some operations transport manure and process waste water off-site for others to use.

Contamination of surface and ground water can occur due to improper collection or improper storage of wastes, contamination of storm water runoff, undersized or leaking waste storage facilities, improper timing or over-application of wastes, or improper containment of silage effluent.

Pollutants most commonly associated with animal waste include nutrients (including ammonia), organic matter, solids, pathogens, and odorous compounds. Animal waste can also be a source of salts and various trace pollutants, including metals, pesticides, antibiotics, and hormones. These pollutants can be released into the environment through discharge or runoff if manure and wastewater are not properly handled and managed.

Nutrients

When nutrients such as nitrogen and phosphorus are discharged to surface water, they can cause increased aquatic algae and plant growth. Decomposition of the resulting algae and plants decrease dissolved oxygen levels. In addition, the biochemical oxygen demand of organic waste depletes dissolved oxygen in water. Low dissolved oxygen levels in streams and lakes can cause fish kills in surface waters.

Pathogens

Bacteria, viruses, and protozoa found in animal waste can increase the risk of waterborne diseases. Fecal coliform bacteria are used as a biological indicator to determine if pathogens are probably in the water. In fresh water, high fecal coliform levels can cause a threat to public health, and restrict recreational, industrial, domestic, and agricultural water use. In marine water, high fecal coliform levels necessitate the closure of shellfish beds, restricting recreational use, and causing adverse economic impact to shellfish growers.

Nitrogen

Inorganic forms of nitrogen are taken up by plants as nutrients when wastes are applied to cropland. Some nitrogen can be released as ammonia. Excessive or improper application of wastes and improper collection and storage of wastes can cause runoff to surface water or leaching to ground water. High ammonia levels in surface water can be toxic to fish.

Ingestion of high levels of nitrate can cause anemia and, if not treated, death to young infants. Infants are most commonly exposed to high nitrate levels when contaminated drinking water is used to make formula and beverages. Nitrate is considered an "acute contaminant" because short-term exposures to levels above the Maximum Contaminant Level (MCL)[1] can cause methemoglobinemia, a blood disorder, in sensitive individuals (especially young infants). Elevated levels of nitrate may also indicate that the water source is polluted by other contaminants, such as pathogens and pesticides.

"The MCL for nitrate [nitrogen] is 10 milligrams per liter (10 mg/l). Unlike most drinking water MCLs, the nitrate MCL is based upon an observed human effect in highly sensitive persons. There is no safety factor incorporated into the standard. In fact, cases of methemoglobinemia are known to have occurred in infants exposed to nitrate concentrations only slightly above 10 mg/l.

"Sources of excess nitrate in drinking water include fertilizers, animal manure piles, and septic systems. Shallow wells, poorly sealed or constructed wells, and wells that withdraw from unconfined water table aquifers are at highest risk." (Washington State Department of Health, *Nitrates in Drinking Water Position Paper*, August 1, 1997, http://www.doh.wa.gov/ehp/dw/fact_sheets/nitrates.pdf, last accessed May 28, 2004)

Frequency of Surface Water Discharge:

Currently, the frequency of discharge varies from facility to facility. Dairies that are covered under their general permit must meet the same no-discharge requirement as contained in this permit. Some other CAFOs have individual permits with varying no-discharge requirements. The discharge frequency of non-permitted facilities varies.

In this permit, the frequency of allowable surface water discharge is:

[1] The maximum permissible level of a contaminant in water delivered to any public water system user. Nitrate is generally measured as NO_3-N (nitrate-nitrogen). When measured as nitrate-nitrogen, the MCL is 10 milligrams per liter (mg/l).

For all CAFOs, except new source swine, poultry, and veal Large CAFOs:
Discharge of manure, litter, or process wastewater into waters of the state from the production area is prohibited, except when the production area is designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a 25-year, 24-hour rainfall event and precipitation causes an overflow of manure, litter, or process wastewater.

For new source swine, poultry, and veal Large CAFOs:
Discharge of manure, litter, or process wastewater into waters of the state from the production area is prohibited, except when the production area is designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a 100-year, 24-hour rainfall event and precipitation causes an overflow of manure, litter, or process wastewater.

Amount of Manure Produced

Table 1 and 2 are from *Animal Manure Data Sheet*, Ronald E. Hermanson and Prasanta K. Kalita, Washington State University, http://cru.cahe.wsu.edu/CEPublications/eb1719/eb1719.html, last accessed May 28, 2004. These tables show how much manure, BOD, COD, solids, nitrogen, phosphate, and potash are produced by different animals. The tables are for general background information only.

Table 1. Livestock manure production and properties

Source: Adapted from American Society of Agricultural Engineers ASAE D384.1 and Midwest Plan Service MWPS-18

		Wet Raw Manure [a]		BOD [b]	COD [c]	Total Solids		Volatile Solids
Animal	Weight, lb	lb/day	ton/yr	lb/day	lb/day	lb/day	ton/yr	lb/day
Dairy Cow	1400	120	22	2.2	15.4	16.8	3	14
Dairy Heifer	1000	86	15.7	1.6	11	12	2.2	10
Beef Stocker	500	29	5.3	0.8	3.9	4.3	0.78	3.6
Beef Feeder	1000	58	11[e]	1.6	7.8	8.5	1.55	7.2
Beef Cow		63	11.5	1.7	8.5	9.2	1.68	7.8
Horse	1000	51	9.3	1.7		15	2.7	10
Nursery pig	35	2.9	0.54	0.11	0.29	0.39	0.07	0.3
Growing pig	65	5.5	1	0.2	0.55	0.72	0.13	0.55
Finishing pig	150	12.6	2.3	0.47	1.26	1.65	0.3	1.28
	200	16.8	3.07	0.62	1.68	2.2	0.4	1.7
Gestating sow*	275	11.6	2.11	0.43	1.16	1.51	0.28	1.17
Sow and litter	375	31.5	5.75	1.16	3.15	4.13	0.75	3.19
Boar*	350	14.7	2.68	0.54	1.47	1.93	0.35	1.49
Sheep Feeder	100	4	0.73	0.12	1.1	1.1	0.2	0.92
Laying Hen	4	0.26	0.047	0.013	0.044	0.064	0.012	0.048
Broiler	2	0.17	0.031	0.002	0.032	0.044	0.008	0.034

[a] Bulk density of raw manure is about 32 cu ft/ton, or 62 lb/cu ft, or 8.4 lb/gal with no flushing or wash water.

[b] Five-day biochemical oxygen demand.

[c] Chemical oxygen demand.

[d] Moisture content.

[e] Evaporation and decomposition reduce feedlot manure in dry climates to 1 to 2 tons of 50% moisture content manure for a 150- to 180-day feeding period.

* For gestating sows and boars that are limit fed, the Midwest Plan Service recommends using hog feeder data prorated according to weight and divide by 2.

Table 2. Fertilizer nutrients in fresh manure [a]

Source: Adapted from American Society of Agricultural Engineers ASAE D384.1 and Midwest Plan Service MWPS-18

Animal	Weight, lb	Total Nitrogen		Phosphate [b]		Potash [c]	
		lb/day	lb/yr	lb/day	lb/yr	lb/day	lb/yr
Dairy Cow	1400	0.63	230	0.302	110	0.49	179
Dairy Heifer	1000	0.45	164	0.216	79	0.35	128
Beef Stocker	500	0.17	62	0.106	39	0.126	46
Beef Feeder	1000	0.34	124	0.211	77	0.252	92
Beef Cow		0.36	131	0.221	81	0.266	97
Horse	1000	0.3	110	0.162	59	0.301	110
Nursery pig	35	0.018	6.6	0.0144	5.3	0.012	4.5
Growing pig	65	0.033	12	0.0268	9.8	0.023	8.3
Finishing pig	150	0.079	29	0.063	23	0.052	19
	200	0.104	38	0.082	30	0.071	26
Gestating sow*	275	0.071	26	0.057	21	0.049	18
Sow and litter	375	0.195	71	0.156	57	0.131	48
Boar*	350	0.091	33	0.072	26	0.061	22
Sheep Feeder	100	0.042	15	0.02	7.3	0.039	14
Laying Hen	4	0.0033	1.2	0.0028	1	0.0014	0.53
Broiler	2	0.0022	0.8	0.0014	0.5	0.0009	0.35

[a] Manure fertilizer elements are not completely available to plants.

[b] $P=0.436\ P_2O_5$

[c] $K=0.830\ K_2O$

* For gestating sows and boars that are limit fed, the Midwest Plan Service recommends using hog feeder data prorated according to weight and divide by 2.

G. Effluent Limitations

Effluent limitations are in S1 of the permit. The surface water effluent limitations (S1.A of the permit) do not allow violations of the water quality standards and limit discharges to the results

of a 25-year, 24-hour rainfall event. The ground water effluent limitations are based on not allowing a reduction in the quality of the ground water except in cases spelled out in S1.B of the permit. The effluent limitations are designed to not cause impairments of beneficial uses.

Additional conditions are based on federal requirements and are found in S1.C of the permit. They include recordkeeping, transferring of manure, reporting requirements, setbacks, and other requirements.

All CAFOs must have an approved written nutrient management plan (condition S3). The nutrient management plan protects water quality and applies to both the production area and the land application. Nutrient management plans address manure and process wastewater collection, storage, and transfer; production area management; land application; testing; record keeping; etc.

H. Applicable Water Quality Standards

Applicable surface water quality standards include fecal coliform, dissolved oxygen, pH, temperature and ammonia. Protected uses include water supply; stock watering; fish, shellfish and crustacean migration, rearing, spawning and harvesting; wildlife habitat; recreation; commerce; and navigation (Chapter 173-201A WAC).

Chapter 173-200 WAC defines the state's antidegradation policy for ground water. This rule also contains narrative ground water standards and numeric criteria for nitrate and other contaminants. This rule uses the antidegradation policy, narrative standards and numeric criteria to protect all existing and future beneficial uses of ground water. Generally, these uses are protected at levels better than those provided for in the criteria. If it is determined to be in the overriding public interest, and all known, available and reasonable treatment (AKART) has been applied before contaminants enter ground water, degradation of existing and future beneficial uses may be allowed on a case by case basis.

I. Summary of Conditions

S1. Effluent Limitations
- Surface water effluent limitations
- Ground water effluent limitations
- Other requirements (record keeping, reporting, etc.)

S2. Permit Coverage
- General permit coverage, individual permit coverage, and definitions

S3. Nutrient Management Plans
- Plan elements, compliance, and updates

S4. Record Keeping, Reporting and Environmental Monitoring
S5. Waste Storage Facilities
S6. Prevention of System Overloading

S7. Termination of Coverage
G1-20. General Conditions

J. Legal and Technical Grounds

How does the permit meet technology-based requirements, water quality-based requirements, the surface water quality standards, the ground water quality standards, and the sediment standards?

Technology-Based Requirements

The State Water Pollution Control Act, RCW 90.48.010, requires the "...use of all known, available, and reasonable methods by industries and others to prevent and control the pollution of the waters of the State of Washington."

The Federal Clean Water Act (CWA) of 1972 set forth various levels of treatment that must be achieved by dischargers by specific dates. Treatment standards for concentrated animal feeding operations are specified in 40 CFR Part 412. These technologies form the basis for federal effluent limitations and are defined as best practicable control technology currently available (BPT), best conventional pollutant control technology (BCT), and best available technology economically achievable (BAT). By July 1, 1984, dischargers were required to achieve compliance with effluent limitations representing the application of best available technology economically achievable (BAT).

The technology-based requirements of the permit are primarily in S1 (Effluent Limitations) and S3 (Nutrient Management Plans).

Condition S1.A prevents discharges to surface waters except in certain rainfall events. These effluent limitations are from 40 CFR 412 and apply to all CAFOs. Condition S1.B protects ground water by requiring "all known, available, and reasonable methods of prevention, control and treatment." They also apply to all CAFOs. Additional effluent limitations are in S1.C, and they apply to certain CAFOs.

Condition S3 requires each CAFO to implement a nutrient management plan. The nutrient management plans require best management practices and ensure that the other requirements of the permit are met. The nutrient management plan applies to both the production area and the land application area.

The requirements in S1 and S3 meet or exceed the federal effluent limitation guidelines (see 40 CFR 122 and 412). The federal guidelines are a minimum requirement that specifically address only surface water protection. Washington State is also required to protect waters of the state, which includes surface water and ground water. The federal guidelines do not address the requirement of meeting water quality standards, a task left up to the state issuing the water quality permit.

Water Quality-Based Requirements and Standards

Surface Water:
Condition S1.A prevents discharges to surface waters except in certain rainfall events. Preventing surface water discharges will protect sediments. The permit also states that "Any discharge in compliance with S1.A1 and S1.A2 shall not cause or contribute to a violation of the water quality standards in the receiving water."

Ground Water:
Condition S1.B prevents discharges to ground waters except in certain circumstances. The permit also states that "discharges shall not cause or contribute to a violation of the State Ground Water Quality Standards…."

Environmental Monitoring

The development, certification and implementation of the Nutrient Management Plan are designed to protect state waters. The environmental monitoring requirements are designed to show that the ground water is being protected. The environmental monitoring requirements are in S4.C of the permit.

Ecology is required by RCW 90.48 to protect the water quality of all waters of the state including underground waters. Studies have shown that CAFOs have impacted ground water quality in Washington. Portions of the Columbia Basin, Yakima Valley, Nooksack Valley and other areas have Nitrate levels in ground water that are higher than the ground water quality standards and drinking water standards. Private water supply wells have been impacted. Nitrate contributions from all sources (including CAFOs) must be reduced to resolve this contamination problem and protect water quality.

The environmental monitoring section of the permit (S4.C) describes when ground water monitoring or other compliance actions may be needed. The compliance actions could include surface water monitoring if the quality of nearby surface water might be affected by ground water.

K. Dilution Zone

No dilution zone is authorized by this permit. See "Frequently Asked Questions" #1.

L. Compliance Schedule

CAFO status	Time frame to seek coverage under an NPDES permit	Examples
Operations defined as CAFOs prior to April 14, 2003.	180 days prior to expiration of current permit.	Operations that previously met the definition of a CAFO and were not entitled to the 25- year, 24-hour storm permit exemption.
Operations defined as CAFOs as of April 14, 2003, and that were not defined as CAFOs prior to that date (e.g. existing operations that become defined as a CAFO as a result of changes in this rule).	April 13, 2006.	For example, "dry" chicken operations (operations that did not use a liquid manure handling or continuous overflow watering system), stand-alone immature swine, heifer and calf operations, and those AFOs that were entitled to the permitting exemption for discharging only in the event of a 25- year, 24-hour storm.
Operations that become defined as CAFOs after April 14, 2003, but which are not new sources.	(a) newly constructed operations: 180 days prior to the time the CAFO commences operation; (b) other operations (e.g. increase in number of animals): As soon as possible but no later than 90 days after becoming defined as a CAFO, except that, if the operational change that causes the operation to be defined as a CAFO would not have caused it to be defined as a CAFO prior to April 14, 2003, the operation must apply no later than April 13, 2006 or 90 days after becoming defined as a CAFO, whichever is later.	For example, an AFO that increases the number of animals in confinement to a level that would result in the operation becoming defined as a CAFO.
New sources	180 days prior to the time the CAFO commences operation.	For example, a new Large CAFO that commences construction after April 14, 2003.
Designated CAFOs	90 days after receiving notice of designation.	

M. Disposal of Residual Solids

Nutrients may only be land applied according to the requirements of each operation's nutrient management plan (see condition S3). Record keeping requirements, and other related requirements, are in S1.C.

N. Finalizing the Permit

The public is encouraged to comment on the draft permit and fact sheet. The comment period is from <<Date to Date>>. All written comments must be postmarked by <<Date>>. Faxed and e-mailed comments must be received by 5:00pm. Please send comments to:

Andrew Kolosseus
Washington Department of Ecology
Water Quality Program
PO Box 47600
Olympia, WA 98504-7600

E-mail: akol461@ecy.wa.gov
Fax: (360) 407-6426

Public workshops on the draft will be held at

<<Date and Time>>
<<Place>>
<<City (East Side) >>
<<Address>>

<<Date and Time>>
<<Place>>
<<City (West Side) >>
<<Address>>

The Department of Ecology will use the information it receives to make a final permit determination. A responsiveness summary will be prepared and available for public review.

The proposed general permit, fact sheet, and related documents are on file and may be inspected and copied between the hours of 8:00 a.m. and 4:30 p.m., weekdays, at the following Department of Ecology offices:

Headquarters / Southwest Regional Office

300 Desmond Drive
Lacey, WA 98503

Northwest Regional Office
3190 - 160th Ave. SE
Bellevue, WA 98008-5452

Bellingham Field Office
1204 Railroad Avenue, Suite 200
Bellingham, WA 98225

Vancouver Field Office
2108 Grand Boulevard
Vancouver, WA 98661-4622

Central Regional Office
15 West Yakima Ave -- Suite 200
Yakima, WA 98902-3452

Eastern Regional Office
N. 4601 Monroe
Spokane, WA 99205-1295

O. Economic Impact Analysis

<< Department of Ecology's economic impact analysis from WAC 173-226-120 will go here >>

P. Frequently Asked Questions

1. What happens if surface water quality standards are violated?

Condition S1.A of the permit has surface water effluent limitations. It states that discharge of manure, litter, or process wastewater into waters of the state from the production area is prohibited, except when the production area is designed, constructed, operated, and maintained to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a 25-year, 24-hour rainfall event and precipitation causes an overflow of manure, litter, or process wastewater. For new source swine, poultry, and veal Large CAFOs, it is the same effluent limitation except it is a 100-year, 24-hour rainfall event.

Additionally, the permit says that any discharge in compliance with S1.A shall not cause or contribute to a violation of the water quality standards in the receiving water. All discharges must be minimized by the CAFO to the greatest extent possible.

However, meeting water quality standards at the "end of pipe" (where process wastewater first enters a water of the state) is unlikely during an extreme rainfall event, even for the best CAFOs. The rainfall event occurs only once every 25 or 100 years, so violations of the water quality standards would be very infrequent. Also, the receiving water would have higher flows during extreme rainfall events, so increased mixing would occur during an allowed discharge.

Generally, during these discharge events that cause violations of water quality standards, Ecology would use its enforcement discretion and not issue penalties. The enforcement discretion would consider the impacts to the receiving water after mixing and the threat to human health. Ecology's main focus during these extreme rainfall events is to work with CAFOs to minimize pollution, not assess penalties.

2. How is Antidegradation Tier I met?

The water quality standards (WAC 173-201A) have Antidegradation requirements. The Tier I requirements can be found in WAC 173-201A-310. This permit meets the Tier I requirements by:

- eliminating surface waters discharges (except in the rainfall events described in S1.A) and
- requiring that any discharge in compliance with S1.A shall not cause or contribute to a violation of the water quality standards in the receiving water.

3. How is Antidegradation Tier II met?

The Tier II requirements can be found in WAC 173-201A-310. The primary way this permit meets the Tier II requirements is by eliminating surface waters discharges (except in the rainfall events described in S1.A).

4. How is Antidegradation Tier III met?

As of the issuance date of this permit, there are no Tier III waters in the state. If a Tier III water body was designated in the water quality standards in the future, a new CAFO on that water body would need to obtain an individual permit and meet the requirements of WAC 173-201A-330.

5. What about air quality?

There are concerns about the effects of CAFOs on air quality, and many CAFOs have been working to minimize their impact on air quality. This general permit only addresses water quality issues. However, it is important that the requirements of this water quality permit do not hinder efforts to improve air quality. The following section describes Ecology's approach to air quality issues at beef feedlots and BMPs that are designed to improve air quality:

Ecology has recognized beef cattle feedlots with inventories of over 1,000 head as potential air pollution sources since the initial adoption of registration regulations in 1976. There are several feedlots located in eastern and central Washington which support normal inventories in excess of 1,000 head. Ecology's primary air quality concern regarding feedlots is the generation of fugitive dust emissions from feed pens, roads, and alleyways.

During the hot, dry weather typical in central and eastern Washington during the summer months, cattle are lethargic during the heat of the day. When temperatures drop in the evening, the cattle become active and have the potential to generate significant quantities of fugitive dust from pens. Vehicle traffic on unpaved roads and cattle movement in alleys can also contribute to fugitive dust emissions from feedlots. This dust may impact neighboring properties, and Ecology and local air pollution control authorities have received complaints from feedlot neighbors regarding fugitive dust.

In recent years, most feedlot operators have instituted various practices to control fugitive dust emissions. Fugitive dust control measures can require a significant commitment of time and resources by feedlot owners and operators.

Washington Administrative Code (WAC) 173-400-040 requires air pollution sources to take "reasonable precautions" to prevent the release of fugitive emissions. The primary mechanism for doing this is to identify best management practices (BMPs) for fugitive dust control and implement these practices according to flexible, site-specific fugitive dust control plans developed by each feedlot and approved by Ecology or the appropriate local air authority.

A dust control plan may modify the design or operation of BMPs from the systems described below as long as their effectiveness is not compromised. The principle mechanism by which most of these BMPs operate is to maintain pen, alley, and roadway conditions which prevent loose particles from become airborne as fugitive dust.

<u>Best Management Practices:</u>

- Fixed Water Application – Sprinklers
  Sprinklers are installed throughout the cattle pens to apply water to the pen surface to prevent dust from becoming airborne.

- Mobile Water Application – Water Trucks
  Trucks with water tanks and spray nozzles are driven through alleyways between feeding pens and water is applied to the pen surface to prevent dust from becoming airborne.

- Increasing Animal Density – Cross fencing
  Increasing the density of cattle in a pen increases the moisture contribution to the pen from manure and urine. This increased moisture, in turn, reduces dust emissions.

- Pen Maintenance
  Removing manure from pens may reduce dust emissions by limiting the volume of loose material which can become airborne. If used in conjunction with water application, this practice may reduce the volume of water needed for dust control.

- Surface Amendments/Applications
  Spreading sawdust, apple pumace, or other materials over the surface of pens and alleyways provides dust control by adding texture or moisture to the surface of the pens or alleys or by increasing the compaction of the surface area.

- Wet Manure/Mound Management
  Stock-piled wet manure is spread back over the mound in the spring and summer and allowed to dry. This spreading of damp material throughout the pen can add moisture to the pen and aids in surface compaction.

- Windbreaks
  Planting tall vegetation, such as poplar trees, along the edge of the feedlot may be effective in reducing the volume of dust which is carried away from the feedlot by prevailing winds.

Source: "Fugitive Dust Control Guidelines for Beef Cattle Feedlots and Best Management Practices," Department of Ecology, 1995.

6. What about facilities with individual permits?

Condition S2.B2 of the permit states:

> This general permit does not cover activities or discharges covered by an individual National Pollutant Discharge Elimination System (NPDES) or state waste discharge permit until the individual permit has expired or been canceled. Any person conducting an activity covered by an individual permit that may be covered by this general permit may request coverage under this general permit.

However, facilities cannot be covered under the general permit if it would violate the anti-backsliding provision. This is a provision in the Federal Regulations (40 CFR 122.44(l)) which says a reissued permit must be as stringent as the previous permit with some exceptions.

In other words, if a facility currently has an individual permit that is more stringent than the general permit, it usually must keep the individual permit.

According to 40 CFR 122.44(l):

> Except as provided in [40 CFR 122.44(l)(2)] when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62.)

7. How long will terminating coverage take?

Condition S7 of the permit allows medium and designated CAFOs to terminate permit coverage in certain circumstances. After the request to terminate coverage is sent to Ecology, Ecology will provide a written response to the permittee stating if the request for terminating coverage was accepted or denied within 60 days.

8. What are the public notice requirements for new operations?

The public notice requirements from WAC 173-226 130(5) are:

For new operations, or for operations previously under permit for which an increase in volume or change in the character of the effluent is requested over that which was previously authorized, only:

(a) The applicant for coverage under a general permit shall cause notice to be circulated within the geographical area of the proposed discharge. Such circulation shall include:

(i) Publishing twice a notice in a newspaper of general circulation within the county in which the discharge is proposed to be made; and

(ii) Any other method the department may direct.

(b) The notice published pursuant to (a) of this subsection shall contain:

(i) The name, address, and location of the facility requesting coverage under the general permit;

(ii) The applicant's activities or operations that result in a discharge (e.g., storm water, fish farming, gravel washing);

(iii) The name of the general permit under which coverage is being requested; and

(iv) The statement: "Any person desiring to present their views to the department of ecology regarding this application may do so in writing within thirty days of the last date of publication of this notice. Comments shall be submitted to the department of ecology. Any person interested in the department's action on this application may notify the department of their interest within thirty days of the last date of publication of this notice."

9. General Permit Coverage

Any animal feeding operation required to be covered under this permit by meeting the definition of a CAFO that has not obtained coverage will be deemed to be in violation of the State Water Pollution Control Act (Chapter 90.48 RCW) and the Federal Clean Water Act, and will be subject to the enforcement sanctions provided in these acts for unlawfully operating without a permit (regardless of whether they discharge or not).

10. Can a facility volunteer to be covered by the permit?

Any animal feeding operation that is not required to obtain permit coverage under this permit may voluntarily elect to do so in exchange for the benefits of permit coverage.

11. What happens if a facility is required to apply for an individual permit?

In cases where the director requires any discharger to apply for an individual permit, the discharger will be notified in writing that another permit is required. This notice will include a statement of why another permit is being required, an application form, and a time limit for submitting the application.

12. What about existing duck facilities?

An existing duck facility may be able to have less-stringent effluent limitations under federal regulations. An individual permit would need to be issued for an operation wishing to be permitted under those less-stringent effluent limitations. New duck facilities must meet the more-stringent effluent limitation identical to other animal types under the federal regulations.

13. If an operation is covered by this permit, is it exempted from State Environmental Policy Act (SEPA) requirements?

No. CAFOs must still comply with SEPA requirements and all applicable federal, state, and local statutes, ordinances, and regulations.

14. What about the "no potential to discharge" exemption?

A "no potential to discharge" determination may be made by the state for Large CAFOs as specified in 40 CFR 122.23(f). There is a very high burden of proof for the CAFO to prove that it has "no potential to discharge." According to 40 CFR 122.23(f)(1), "the term 'no potential to discharge' means that there is no potential for any CAFO manure, litter or process wastewater to be added to waters of the United States under **any** circumstance or climatic condition" (emphasis added). These CAFOs would not need to be covered by an NPDES permit.

15. What are the proposed permit fees?

The Department of Ecology is authorized by state law to adopt rules to fund the operation of the Water Quality Wastewater and Stormwater Discharge Permit Programs.

Fee-eligible activities include:

- Processing permit applications and modifications;
- Monitoring and evaluating compliance with permits;
- Conducting inspections;
- Securing laboratory analysis of samples taken during inspections; and
- Supporting the overhead expenses that are directly related to these activities.

Permit fees are paid by holders of federal and state wastewater and stormwater discharge permits issued by Ecology. Funding for the permit program was initially paid for by citizens through state general revenues appropriated by the Washington State Legislature and federal grants. In 1988, voters passed Initiative 97 (now codified as RCW 90.48.465) requiring holders of wastewater discharge permits to pay annual fees for discharging into waters of the state. Fees paid by holders of wastewater and stormwater discharge permits are deposited into a dedicated account.

The permit fee amounts are set in WAC 173-224 Wastewater Discharge Permit Fees; they are not set in the general permit. WAC 173-224 is currently being revised, and a revised rule should be adopted by July 12 and in effect August 13, 2004. The information contained in this fact sheet must be considered preliminary until WAC 173-224 is adopted. The FY 2005 fees for CAFOs are 3.03% higher than the FY 2004 fees. This increased is based on inflation.

Non-Dairy CAFOs	FY 2005 Annual Permit Fee	FY 2006 Annual Permit Fee
< 200 Animal Units	$145	$149
200 - < 400 Animal Units	$362	$371
400 - < 600 Animal Units	$725	$744
600 - < 800 Animal Units	$1,087	$1,115
800 Animal Units and greater	$1,451	$1,489

Dairies: $0.50 per animal unit not to exceed $1,015 for FY 2005 and $1,042 for FY 2006 and beyond.

Definition of an "Animal Unit":

Animal Type	Number of Animals per Animal Unit
Dairy Cows	
Jersey Breed	
Milking Cow	0.900
Dry Cow	0.900
Heifer	0.220
Calf	0.220
Other Breeds	
Milking Cow	1.400
Dry Cow	1.000
Heifer	0.800
Calf	0.500
Feedlot Beef	0.877
Horses	0.500
Sheep	0.100
Swine for breeding	0.375
Swine for slaughter	0.110
Laying hens and pullets > 3 months	0.004
Broilers and pullets < 3 months	0.002

For those CAFOs not listed on the above table, the department will use 1,000 pounds of live animal weight and the weight of the type of animal in determining the number of animal units.

16. Why is this an NPDES and state waste discharge permit?

As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The U.S. EPA is requiring states to issue NPDES permits to all CAFOs.

The state waste discharge part of the permit covers all waters of the state, including ground water. State Law (RCW 90.48.160) requires: "Any person who conducts a commercial or industrial operation of any type which results in the disposal of solid or liquid waste material into the waters of the state… shall procure a permit" from the Department of Ecology.

17. What is the "overriding public interest" in S1.B1 of the permit?

Overriding public interest must be demonstrated through a public notification procedure where the public will be notified and they will be invited to comment. This involves notifying the public and affected parties of the benefits of the activity as well as the reasons that the discharge will not maintain background water quality. Based on the comments submitted and the issues raised, Ecology will determine if the discharge is in the overriding public interest. If it is determined that it is not in the overriding public interest then Ecology will work with the facility to develop alternate mitigative measures that will address the public concerns. If mitigation is not possible, then the discharge will not be allowed.

Overriding public interest must be demonstrated through one of the following ways. There must be (1) an alleviation of a public health concern, (2) a net improvement to the environment, or (3) socioeconomic benefits to the community.

See *Implementation Guidance for the Ground Water Quality Standards,* April 1996, Department of Ecology publication number 96-002 for more information.

18. Are there ground water limits in the permit?

No, there are no ground water limits identified in the permit.

19. Is ground water monitoring required in the permit?

No, there is no automatic requirement to monitor ground water. There is language that states ground water monitoring or other compliance actions are required when a facility is showing it has potential to pollute waters of the state.

20. Who has to do ground water monitoring?

Ground water monitoring is not required in the permit unless the regulatory agency requires it as part of a compliance action.

21. What kind of monitoring is required?

A variety of monitoring including soil monitoring is required in the nutrient management plan see section S3 of the permit. Soil monitoring over a five year period to determine if there is a potential to impact ground water or surface water is required for Large CAFOs

22. What happens after five years?

If the soil testing shows that nutrient levels exceed 45ppm N (Nitrate, Nitrite & Ammonium) in more than 3 of 5 consecutive years and the levels are not decreasing, the facility will enter into compliance action. This compliance action could require surface water monitoring, ground water monitoring, change of operations or other actions that seem necessary to protect state waters.

23. Is this a phased approach?

Yes, the permit requires soil monitoring for large CAFOs annually. Only after a five year period where there have been 3 years of soil monitoring showing high nutrient levels which are not decreasing will compliance actions or ground water monitoring be required.

24. Does the permit require the use of NRCS Field Office Technical Guideline?

The permit requires the nutrient management plan to conform to the U.S. NRCS Field Office Technical Guidelines or equivalent best management practices.

25. What is an equivalent best management practices?

It means an operational, source control, treatment or innovative practice which results in equal or better protection of waters of the state.